

Storms of 1884 - 1886

STORMS OF 1884-1886

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Introduction.

The present report describes results of the author's continuing effort of improving historical knowledge of tropical cyclones which is planned to be used in determining their frequency variation during the second half of the nineteenth century and early this century. The present report covers the period 1884-1886. The documentation in Neumann et al. (1993) has already covered this period, but the study of individual storms corresponding to those years has been undertaken in order to check the tracks for correctness in the light of information contained in other sources and to document the evolution of new storms to be added to the ones in their above mentioned publication.

Sources and methods.

Sources that were used in checking the tracks in Neumann et al. (1993) were available cyclone lists such as those published in Tannehill (1938) and Dunn and Miller (1960), books and articles about storms such as Sarasola (1928), Vines (1895), Tucker (1982) and Martinez-Fortun (1942) and meteorological information contained in the Monthly Weather Review and in sections of marine and general news published in newspapers, primarily in The New York Times and The Times (London). Each storm in Neumann et al. (1993) for the period 1884-1886 was checked against the above information sources and appropriate modifications were proposed for the tracks which were found to be in error. The sources above also allowed the author of this study to document some new storm cases which, of course, are not shown in Neumann et al. (1993). It should be emphasized that information in the above sources was crucial for documenting the new storms.

Tracks of newly documented storms were combined with those for previously known storms after having applied to them the proposed corrections along their tracks, and the storms for each year in the period 1884-1886 were finally numbered in chronological order in accordance to the day they were first detected. Tracks for each individual year are displayed on maps in Fig. 1 through Fig. 3. Estimated 7 A.M. (E.S.T.) positions were denoted by black dots along the tracks, with adjacent numbers indicating the day of the month. The month was indicated only for the starting day of each track and, in addition, for the first day of the month when the track was found to continue from one month to the next. The storm number was indicated by a large size number near the beginning of the track. As a difference from the tracks corresponding to 1884 and 1885, it should be mentioned that, for 1886, tracks for tropical storms were denoted by dashed lines and tracks for hurricanes were denoted by solid lines.

Results.

The detailed study of the 1884-1886 storms is presented in the Appendix. The appendix presents 24 storms on a one-by-one basis. These storms are listed in Table 1. Three of these 24 storms (12.5 percent) are new cases which are not included in Neumann et al. (1993). Note in the table that 2 of the new cases were found for 1886 and that the other case was found for 1884. In regard to the number of known cases in Neumann et al. (1993) for which a track modification was proposed, Table 1 shows that some changes along the track were implemented for 14 out of the 21 storms displayed in Neumann et al. (1993) for the period 1884-1886. This means that, as a result of the present study, 66.7 percent of the tracks for the above mentioned 21 storms was not found to be entirely correct. The maximum number of storm tracks to be modified for an individual year was 9 in 1886 and the corresponding minimum was 2 in 1884.

For 1884 and 1885, no attempt was made to formally identify the storms as hurricanes or tropical storms. In that regard, this study is consistent with the policy observed in Neumann et al. (1993) for those years. However, the author of this study has referred to the intensity reached by many of the storms in an informal basis. This procedure was changed for 1886 when a formal classification of the cyclones as tropical storms (T.S.) and hurricanes (H.) was introduced to be consistent with the new policy that Neumann et al. (1993) implemented for 1886 and later years.

Table 1
List of Storms
(1884-1886)

List No.	Ident. # & Date (s)	New Case	Track Modified
1	Storm 1, 1884 (Sept. 1 - 6)	Yes	---
2	Storm 2, 1884 (Sept. 3 - 16)	No	No
3	Storm 3, 1884 (Sept. 10 - 20)	No	Yes
4	Storm 4, 1884 (Oct. 7 - 17)	No	Yes
5	Storm 1, 1885 (Aug. 7 - 15)	No	Yes
6	Storm 2, 1885 (Aug. 21 - 28)	No	Yes
7	Storm 3, 1885 (Aug. 29 - 31)	No	No
8	Storm 4, 1885 (Sept. 17 - 23)	No	No
9	Storm 5, 1885 (Sept. 18 - 21)	No	No
10	Storm 6, 1885 (Sept. 24 - Oct. 2)	No	No
11	Storm 7, 1885 (Sept. 26 - 29)	No	No
12	Storm 8, 1885 (Oct. 8 - 13)	No	Yes
13	Storm 1, 1886 (Jun. 13 - 14)	No	Yes
14	Storm 2, 1886 (Jun. 17 - 24)	No	Yes
15	Storm 3, 1886 (Jun. 27 - Jul. 2)	No	Yes
16	Storm 4, 1886 (Jul. 16 - 24)	No	Yes
17	Storm 5, 1886 (Aug. 13 - 21)	No	Yes
18	Storm 6, 1886 (Aug. 15 - 27)	No	Yes
19	Storm 7, 1886 (Aug. 20 - 25)	Yes	---
20	Storm 8, 1886 (Sept. 16 - 24)	No	Yes
21	Storm 9, 1886 (Sept. 22 - 30)	No	Yes
22	Storm 10, 1886 (Oct. 8 - 13)	No	No
23	Storm 11, 1886 (Oct. 10 - 15)	Yes	---
24	Storm 12, 1886 (Oct. 22 - 26)	No	Yes

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Captions

- Fig. 1 Storms of 1884. Estimated positions shown by black dots along the tracks are for 7 A.M. (E.S.T.).
- Fig. 2 Same as Fig. 1 but for 1885.
- Fig. 3 Same as Fig. 1 but for 1886. Tracks for tropical storms are denoted by dashed lines and tracks for hurricanes are denoted by solid lines.